

UNITED STATES PATENT OFFICE.

JOHN W. DIXON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MAKING PAPER-PULP FROM WOOD, STRAW, &c.

Specification forming part of Letters Patent No. 52,545, dated February 13, 1866.

To all whom it may concern:

Be it known that I, JOHN W. DIXON, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Process of Making Paper-Pulp from Wood, Straw, Cornstalks, and other vegetable fibrous substances; and I do hereby declare the following to be a full and exact description of the same.

I cut the wood, straw, cornstalks, &c., into short lengths by any convenient cutting-machine. The cuttings are then placed in a strong closed boiler or digester and submitted to the action of a highly-heated solution of silicate of soda under pressure. With wood I find a solution of 2° to 5° Baumé, at a pressure of eighty to one hundred and twenty pounds and the corresponding temperature thereto, will complete the pulping operation. A less strength of solution at this temperature—say from 2° to 4° of Baumé—will answer with straw, cornstalks, or sorghum, and I indicate these temperatures and strengths respectively in a good digesting apparatus, such as hereinafter described.

I prefer also to perform the digesting operation under pressure in the peculiar apparatus for which I have applied for a patent, in which the boiling liquid under pressure, containing the solution of silicate of soda, is made to cir-

culate from the bottom to the top of the digester and through the mass to be pulped within the digester by means of a pump. The heat may be communicated by a coil of steam or hot-water pipes in the bottom of the digester, or any other convenient mode.

I do not desire to limit myself to the above degrees of temperature for treating the material, nor the above strength of solution, nor to any special form of pulp-digesting apparatus. The heat of the liquid solution in the boiler may be varied according to the nature of the substance to be treated and the length of time under treatment and the form of digesting apparatus adopted.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The process of treating wood or other vegetable substances by boiling in a solution of silicate of soda under pressure, as a process or preparatory process for making pulp in the manufacture of paper from wood, straw, or other vegetable substances, substantially as described.

JOHN W. DIXON.

Witnesses:

J. E. SHAW,
BENJN. McMAKIN, Jr.